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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/985,976	11/07/2001	Leonard E. Cornelisse	10494-49	4630
7590 06/07/2005			EXAMINER	
Bhupinder S. Randhawa			FLANDERS, ANDREW C	
Bereskin & Parr			ART UNIT	
Box 401			PAPER NUMBER	
40 King Street West			2644	
Toronto, ON M5H 3Y2			DATE MAILED: 06/07/2005	
CANADA				

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/985,976

Applicant(s)

CORNELISSE, LEONARD E.

Examiner

Andrew C. Flanders

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 07 November 2001.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-56 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-56 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

1. Claims 42 and 43 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 42 and 43, they recite the limitation "said signal controlling device" both in line 1. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. **Claims 1-2, 9, 13-14, 18-19, 31-41 and 50 - 56** are rejected under 35 U.S.C. 102(b) as being anticipated by Kates (U.S. Patent 4,852,175).

Regarding **claims 1, 13 and 33**, Kates discloses a system for and a method of processing an acoustic signal, said method comprising the steps of: (a). converting an acoustic input signal into a digital signal (6); (b), transforming the digital signal into one or more frequency domain input signals (10A); (c), detecting the magnitude of each of the one or more frequency domain input signals (10A, 10B); (d), providing an adjustable

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digital loudness normalization control signal (10B, 10C, 10D) for controlling a configurable input/output characteristic; (e), for each of the one or more frequency domain input signals, determining a gain value (10C) in response to the loudness normalization control signal and the magnitude of the frequency domain input signal (Fig. 2); (f). Providing one or more frequency domain output signals by multiplying each of the frequency domain input signals by the corresponding gain value (10D); (g). transforming the one or more frequency domain output signals into a digital acoustic output signal (10E, 12); (h), converting the digital acoustic output signal into an acoustic output signal (14) as claimed.

Regarding **claims 2, 14 and 19**, Kates discloses a system for and a method of processing an acoustic signal, said method further comprising the steps of: (1) independently adjusting the digital loudness normalization control signal to configure the configurable input/output characteristic in accordance with the preferences of a hearing impaired individual (10B, 10C and 10D).

Regarding **claims 9, 18 and 34 - 37**, Kates discloses a system for and a method of processing an acoustic signal, wherein step (b) comprises transforming the digital acoustic signal into at least two frequency domain input signals (10A), each of said frequency domain input signals having a configurable channel (10B and 10E) input/output characteristic associated therewith, said channel input/output characteristics together forming said input/output characteristic, and wherein said at

least two frequency domain input signals are provided with different channel input/output characteristics (Fig. 4).

Regarding **claims 31 - 32, 38 - 41 and 50 - 56**, Kates discloses a system for and a method of processing an acoustic signal, wherein step (e) comprises determining the corresponding gain value for each of the one or more frequency domain input signals by means of a look up table (Fig. 4) as claimed.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 3 - 8, 10 - 12, 15 - 17, 20 - 30, and 42 - 49** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kates (U.S. Patent 4,852,175).

Regarding **claims 3, 15 and 22 - 24**, Kates discloses a system for and a method of processing an acoustic signal, said method comprising the steps of (a) to (h). Kates does not clearly teach that performing steps (c), (e) and (f) are a programmable digital signal processor as claimed. However, the examiner takes the official notice that providing a programmable or reprogrammable DSP with both volatile/non-volatile memories in electronic devices, such as a hearing aid, is very well-known in the art.

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to provide a programmable or re-programmable DSP to a hearing aid as an alternate choice for providing optimization for the device, such as software upgrading.

Regarding **claims 4 and 21**, Kates discloses a system for and a method of processing an acoustic signal, wherein step (e) comprises calculating the corresponding gain value for each of the one or more frequency domain input signals by means of a fitting formula programmed into said programmable DSP (10).

Regarding **claims 5 - 6, 16 and 25 - 27**, Kates discloses a system for and a method of processing an acoustic signal, wherein step (e) comprises determining the corresponding gain value for each of the one or more frequency domain input signals by means of a look-up table (Fig. 4).

Regarding **claims 7 - 8 and 17**, Kates discloses a system for and a method of processing an acoustic signal, wherein step (e) comprises determining the corresponding gain value for each of the one or more frequency domain input signals by means of a fitting formula programmable into said programmable DSP (10) and a look up table (Fig. 4) stored in non volatile memory in said programmable DSP (10).

Regarding **claims 10 -12, 20, 28 - 30 and 45 - 49**, Kates discloses a system for and a method of processing an acoustic signal, wherein determining a gain value from

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the corresponding loudness control signal in step (e) includes determining a gain value in accordance with input/output characteristic (Fig. 2). But Kates does not specially teach the gain value in accordance with a curvilinear, input, or output compression input/output characteristic as claimed. However, the examiner takes the official notice that providing a data compression in digital signal processing in electronic devices, such as a hearing aid, is very well-known in the art. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to provide a data compression during digital signal processing to a hearing aid as an alternate choice for providing optimization for the device, such as saving memory space.

Regarding **claims 42 - 44**, Kates does not specially teach the signal-controlling device in detail as claimed. However, the examiner takes the official notice that providing controlling elements, such as a variable resistor, a switch for a signal-controlling device, which is also can be accessed by a user of a hearing aid, is well-known in the art. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to provide such element for the hearing aid as an alternate choice for providing simple, easy and effective solution for controlling the loudness of the hearing aid.

### ***Conclusion***

This is a continuation of applicant's earlier Application No. 09/299,082. All claims are drawn to the same invention claimed in the earlier application and could have been

finally rejected on the grounds and art of record in the next Office action if they had been entered in the earlier application. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

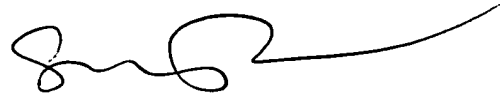
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew C. Flanders whose telephone number is (571) 272-7516. The examiner can normally be reached on M-F 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on (571) 272-7564. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**SINH TRAN**  
**SUPERVISORY PATENT EXAMINER**

acf